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ABSTRACT

This paper discusses the need for students and faculty at small, under-funded academic libraries in rural areas, such as the University of Maine at Machias, to have Internet proficiency so they can access more sources of information. Small academic libraries in remote areas often lack the resources for students to conduct adequate research without weeks of planning. The Internet can be used as an alternative information source. However, using the Internet can be frustrating because of the huge amount of information found on it, some of which is seen as trivial. In order to make the Internet a quality research tool, a college should make a commitment to providing computers and hiring support staff to train students and faculty. Changes need to be made in the Internet, too; standards and a system of organization need to be imposed on it. (AEF)

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Distance and Distance Research

The Need for Internet Proficiency in the Shadow of Shrinking Resources.

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Introduction

I teach public speaking and theatre courses at a small New England university located in Downeast Maine. We have an enrollment that hovers at about a thousand. When my students are charged with research, they face an immediate challenge: the lack of accessible resources. Funding cuts have limited the size of our library holdings and reduced the amount of updated material. Time and time again, my students are forced to change their research topics because either the information was not available or it was hopelessly out of date. Although we are linked to the rest of the state via an on-line holding catalog, a book can take from five to twenty days to arrive.

Many students and faculty have found their own solutions. One is to travel to the main campus in Orono, a journey which will easily eat up an entire day. A second is to forage local and private libraries for more reliable information. The final option is to use our computer network to voyage electronically to campuses and libraries throughout the world via the Internet. Our local computer network is gradually acquiring the ability to send electronic mail, read news groups, and use Gopher, Telnet, FTP, and the World Wide Web. Both our Macintosh and DOS computers are being upgraded in hardware and software to surf the net with ease.

But having that ability and using it are two quite different things. Only ten percent of our faculty are comfortable with Internet travel, and I fear the number of students is at the same level. Computer usage tends to be relegated to the old troika of word processing, spreadsheets, and data processing. The problem could thus be posed in this way: although we lack immediate resources, we have them available at a distance. Although the tools are available, we aren't using them. The challenge for the computer administrator, and indeed, for everyone who needs information, is making these tools easily available for everyone.

Our goal must be to make Internet acquisition of information, whether it be text, sound, pictures, or movies, both easy for the novice and worthwhile for the adept. That last qualification comes from seeing systems such as Gopher servers that offer a relatively small menu of selections. Such systems are user-friendly, but a user comes up against their limitations rather quickly. A higher level of user ability needs to be easily available.

The University Library and Research

As a graduate student at the University of Maryland and then at Ohio State, I took their large libraries for granted. I had two or three research papers due each semester, papers that required extensive

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surveys of the available literature. In both libraries, each with holdings best expressed in the millions, I could start my work with either generalized or specific bibliographies, take citations and then start tracking down the originals. Other papers and articles would yield still more sources and I would track them down. I was amazed when I found just how many obscure sources were languishing in a musty corner of the Ohio State stacks. Let me give you an example.

Several years ago, I was studying changes in Bertolt Brecht's *Galileo*. This play has been through two major revisions, both carefully documented by the playwright. The biographies and articles I could find pointed to an excellent source which traced Brecht's creative process in both words and pictures, something Brecht called a model book. I knew it wasn't in the theatre stacks, because I had come to know those intimately. However, once I knew it existed, I was able to track it down in the German-language oversized section.

This was not a matter of calling for an inter-library loan or traveling out of state or even leaving campus. Once I knew the bibliographic details, I was able to find the text easily. Such ease of use is vital to scholars. It is to be expected on a large campus. It is difficult to attain on a smaller one.

Consider such a research project at the University of Maine at Machias. First of all, our campus holdings on Brecht consist of three general books and an LP. A search of the system collections shows many critical commentaries but no model book for Brecht's *Galileo*. The student immersed in this project would either have to travel, work on interstate library loans, console himself or herself with secondary sources, or change the project.

Research at the Smaller School

Let's come forward a few years. I teach theatre and public speaking courses at the University of Maine at Machias, a small campus with just under a thousand students. Merrill Library holds about 66,000 volumes. This isn't bad for a school our size. We certainly aren't at the top of the list, but we aren't at the bottom either, especially considering the enrollment.

My students must give five speeches that require research. They are short speeches, from three to seven minutes long, but the students have to find reputable sources, accurate statistics and current information to support their statements. In other words, if someone is going to give a speech advocating a reduction in Maine's fishing fleet, he or she had better have solid and convincing data to corroborate everything. A personal anecdote is interesting and often convincing, but a good speech deals in facts that back up opinions.

My students often feel forced to change their topics due to a lack of library resources. The cry I hear all too often is: "the library just doesn't have anything on my topic." What is even worse is hearing: "I found a book, but it's fifty years old." "I found some great articles in *The Reader's Guide* but we don't have that periodical." Their frustration is palpable.

Sometimes they make a pilgrimage to Orono, home of the University of Maine, the flagship campus of the Maine system. It has 11,000 students, and the main library houses 646,000 volumes. For the really dedicated student, this is usually a suitable solution. It is a two hour trip from Machias to Orono, at least if you stay close to the speed limits. Four hours for travel, several hours research and at least an hour for

lunch take up an entire day. One should take into consideration that the student who is motivated enough to make this journey is taking several other challenging courses, is usually busy with extra-curricular activities and, more and more, is also looking after a home and family. These trips tend, therefore, to be few and far between. If a student can change a research topic to something available locally, she or he often does. The quality of research suffers and the student does not really have exposure to the true research experience.

The libraries of the University of Maine System are linked electronically in the URSUS system. Thus if you are looking for a book, you are not limited to where you are located. URSUS will match search parameters and give the locations of books, telling a researcher what is available and where. You can order the texts you want from your terminal, and, depending on a number of interesting circumstances, you will receive it one to four weeks later. URSUS also offers ERIC, CARL, and the expanded Academic Index for periodical searches. Journal loans must be processed by hand and can take several weeks or, in some cases, arrive via fax.

As well as this system works, I would like to address this question to other educators: How many of your students actually know their topics so far in advance that they can do preliminary research with a one-month lag time? Let's look at the research process: how many times have you been able to proceed clearly and evenly from first preliminaries to final research? How many times have you needed to recheck that quote, confirm the statistics or see exactly what the author said just before you started taking notes? Human nature works best with a flexible and forgiving system, one that can work well with last minute and emergency demands. A large university library gives us that kind of research support. Smaller facilities just aren't up to the task.

Utilizing the Internet: Just the FAQs, man.

So, what sort of alternatives can be found on today's campuses? What can the researcher do if the library is just too small or lacks the needed resources? This is where the Internet comes into play. Gophers, FTP programs, and World Wide Web readers give us access to information around the world. Search engines simplify the researcher's trek through cyberspace, but a little bit of knowledge can take you quite far.

Last year, one of my students came to my office. She had been very excited over her speech topic, a short historical look at her sorority. Unfortunately, her sisters could not help her out: they had no local resources. The library had no information on the subject. The national office of the sorority was not responding. She had resigned herself to changing her topic, which was to be the topic of our discussion. I asked her if she had tried the Internet. She hadn't. Within a few minutes we had located the *alt.fraternities.and.sororities* FAQ listing. It contained the information she needed to get a good start on her research.

Another example has more of a bearing on serious, long-term research. One of our students is pursuing a master's degree in molecular spectroscopy. I freely admit that I have no idea what this is. I do, however, know my way around the Net, so when she had exhausted the local resources, she came to me. We found *sci.techniques.spectroscopy* as well as the Society of Applied Spectroscopy's Home Page. She has established correspondences with researchers in this field throughout the world and her work continues with renewed vigor. I still have no idea what she's working on.

Potholes on the Infobaun

These are the sort of success stories that technology enthusiasts love to spread. They are unfortunately the kind of tales that lead to wild hyperbole and, for some, frustration. A novice who expects quick and easy answers is likely to be disappointed. In a recent *Newsweek*, Clifford Stoll takes the curmudgeon's chair to declare that "no on-line database will replace your daily newspaper, no CD-ROM can take the place of a competent teacher and no computer network will change the way government works." For the moment, this is true. The Internet can be compared to a toddler who has just learned to walk. He is into everything and all over the place.

Two aspects of the Internet help to illustrate both the excitement and the frustration a newbie (novice user) finds when peeking into this brave new world. Usenet groups number in the thousands, some with mundane names such as *alt.adoption.agency*, others with cryptic titles such as *alt.alien.vampire.flonk.flonk.flonk*. Logging onto the more serious discussion groups will yield important information. It can lead you to correspondents whose knowledge and insights can help you find answers to sticky questions. It can lead to firm friendships. It can also be a colossal waste of time. Anyone who has been flamed by a twelve-year-old will attest to that. There are far more frivolous "news" groups, groups that come and go month by month, than established and practical groups.

The World Wide Web also shows the effects of the information explosion. You will find pages that catalog the holdings of Italian art galleries, pages that lead you to photography from the Hubble Space telescope, and pages that document Broadway productions (an important page in my field). You will also find pages that tell your tarot for the day, take you on a tour of the Starship *Voyager*, and tell you lawyer jokes. Just like Usenet discussion groups, there is much here that is useful. There is much here that is ludicrous. Sifting through it can be a colossal, if not ultimately daunting, task.

Last semester, our computer manager held a workshop to introduce faculty to Internet resources. They had fun sending e-mail, finding recipes on the Gopher, and browsing the various groups. Unfortunately, the trivial nature of *alt.alien.vampire.flonk.flonk.flonk* and other groups led most of them to conclude that this was a cute toy that would never replace a couple of hours in a good old-fashioned musty library.

The Role of the Individual Campus

What must we do to enable our students and faculty? What must we do to disable the "high priest" mentality that keeps people away from the technology? What must we do make the Internet a quality research tool for all researchers? I believe the solution lies in two areas: the campuses and the Net.

If a campus is to make a commitment to technology, it must make computer labs available to all students. It must put computers on each instructor's desk. It must employ faculty who use computers and use them well. This is, however, only a start. The faculty and support staff need to be shown how to use software, hardware, and the Internet. This means a support staff who has some insight into faculty and student needs. This means an administration which supports technology with upgrades to meet faculty needs. It means careful consideration of software. For example, I don't use any of the standard packages that work on UNIX and Windows. My computer of choice is a Macintosh, so I have

downloaded NewsWatcher for browsing the groups, Eudora for my mail, and Netscape for the Web. If I had to use the UNIX packages, I would not use the Internet as often or as effectively as I do.

Familiarity with the technology is only the first step. The campus that wants to use technology well will integrate software and Net work into the curriculum. I now require my students to learn our e-mail system. We take time in class to learn it and they receive extra credit for assignments handed in electronically. I would refer you to two excellent Web pages: *Education: On-line Teaching and Learning* for an excellent accumulation of teaching resources, and *New Tools for Teaching: J. J. O'Donnell*, by James J. O'Donnell, University of Pennsylvania. Dr. O'Donnell has a delightful discussion of ways to use the Web in a classroom setting, ways that require effort from the instructor, but effort that is assuredly worthwhile. The instructor who embraces this new technology and who also receives support from her or his administration will benefit from it.

Changes Needed in the Internet

The main work in making the Internet a reliable research tool does not rest solely with the individual campuses. It remains for the Net to change, to grow up in some ways. It is good that anyone with the know-how and the resources can make a Web page. I applaud that freedom of expression. It is, however, bad that there is nothing to help us cope with the explosion of information. We need mechanisms to sift through the dross. We need something more sophisticated than a word search engine.

The text world gives us an interesting contrast. If you have a manuscript, you submit it to publishers, usually publishers who specialize in your field. If it is accepted, it goes through an editing process. Once the book is published, the job is not over: the bookstores have to pick it up and the customer decides to buy it. This simplified model doesn't begin to address the complexities of the entire process (including reviewers and publicity), but it points to a process that imposes some standards. We need such standards on the Internet.

Essentially, what we now have is an underground press. It is wild, woolly, independent and unfettered. That should not disappear. We don't want to lose silly newsgroups or ridiculous web pages. We should instead institute some sort of ratings system, something that would tell me, before I head out to a site, that this is useful for serious research. We should have a guide that helps me get where I need to go. A standard such as this calls for an institution that commands academic respect to catalog the Internet and create standards. For example, do we have a site with numerous raw documents available through Gopher or FTP? Are they useful for professionals and serious scholars? Do we have a site with interconnected web pages? Again, are they useful for professionals and serious scholars? There are many Web pages that do an admirable job of cataloging their specialties, and those who use the Internet on a regular basis have lists of their favorites. We need someone to come forward and set a standard that any researcher can consult with confidence.

Some organizations such as the Association of Research Libraries and the OCLC Online Computer Library Center have started to develop on-line catalogs of the Internet. The proposed services range from simple listings to reviews of holdings. One of the more promising efforts is being developed by Columbia University librarian David S. Magier. Working with the New York Public Library, New york

University and Rutgers University, Magier plans to explore and catagorize and evaluate Internet resources.

We will need a major educational institution with a firm grounding in library science to examines the Home pages, and FTP and Gopher sites on the Internet. These information sources would be rated according to content, ease of use, and layout. This information would go onto a well-designed database that can be easily accessed from the web. It would be mirrored throughout the world to increase accessibility. The database would be updated on a regular basis. In this way, when I want to find commentary on translations of Brecht's *Mother Courage*, I would check the main database. Of course, if I have already found suitable sites in my field, I could look at them first. If those sites are well-maintained, they will feature links found from the central database. In this way, the knowledge spreads out along the web without fetters.

Many of the current pages out on the Net are well-designed and attractive. Many of the current pages out on the Net are connected to vast amounts of information. As we learn more and more about how to disseminate this information effectively, we must take the reins and guide the process. The Web, as we know it, will remain essentially the same. If we have a well-designed guide, it can lead researchers into the twenty-first century.

Consider a freshman coming into the main library research section for the first time. He goes slowly, hesitantly, because he doesn't know where things are. If he asks, the job will go much faster. By the time he is a senior or graduate student, he can go right to the indexes and sources he needs. Proficiency on the Net should be no different than proficiency in the library. For the Internet to reach that level of usefulness, we must develop skills and support on campus and standards that will stand the scrutiny of serious researchers.

Local university library resources, especially on small rural campuses, tend to be under-funded. As computer networks become more prevalent, the Internet has the potential to begin to equalize resources. We must, however reach out with guidance databases that can help the novice navigate the enormous amount of information which is generated. We must establish standards that will enable the serious researcher to make his or her best usage of this fantastic new hyper-library. We must make ease of use and accessibility personal credos for our electronic age.